

The application of AHP in measuring green financing initiative in Islamic Banking

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The Application of Analytical Hierarchy Process (AHP) in Measuring Green Financing Initiative in Islamic Banking

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Abstract - The banking sector has an important role in providing industrial capital to achieve the sustainable development of nation's economy. The lack of banking assets that consider The Green Factor becomes an important issue in Sharia banking. The Green Financing is how to create a sound banking system according to Islamic values, environmentally friendly, and create a positive influence on social community. This study identified The dimensions in measuring Green Financing Initiatives thus consist of 6 contracts, and 25 sub-variables, including Environmental Analysis, Capital Adequacy, Risk Management, Financial Structures, Factor Disclosure, and Factor Governance. Herein, AHP is used as an approach in providing the weight priority of attribute pairwise comparison for the entire variables proposed in Green Financing Dimension, through the calculation of Consistency Ratio (CR) and Consistency Index (CI) values. This weight values as priority consideration in measuring Green Financing Initiatives performance. As a result, the measurement achievement were be then classified as low, medium and high. This analysis help internal and external management banking in making decisions and taking corrective action. Management risks will be addressed through these performances. As a case study, the measurement of several Sharia Indonesia Banks was conducted, viz., Bank Syariah Mandiri and Bank Muammalat.

Keywords: analytical hierarchy hierarchy process; green financing; sharia banking; performance measurement

1. Introduction

The aggregate growth of Bank Syariah Mandiri exceeded conventional banks by 43.16% compared to 12.4% in 2000-2014 (Handayana and Dwi, 2015). However, it decreased in 2015. One of the causes is due to the lack of operational efficiency and adequate services of quality, human resources, and technology. The company's sustainability is strongly affected by the awareness of how the importance of long-term strategy was through the creation of good banking not only in financial, but also friendly in the environment, social life and community. The way is through lending and investment standards that pay attention to the risk influence on the social environment of the Green Financing system. The basic concept of sharia banking strongly supports the implementation of Green Financing. Moreover, Muslims as the majority of Indonesia's population becomes a great opportunity in the development of sustainability financial banking. The indicators in Green Financing are including bank commitments, volume priority and financial flow distribution (Mahfuzur and Suborna, 2016). Various Product and concept Green Financing continuously introduced. However, only a small portion of them that can be categorized as "Green". ISO 14001 as an international banking certification that carries the principle of eco-controlling forces the execution of Green Financing becomes inevitable. The implementation process of Green Financing for each country is varied such as in China, Bangladesh, Mexico, Morocco, or in Indonesia. Generally, some of the common barriers and challenges that often encountered in this execution are including how to define and measure banking sustainability; how to instill banking sustainability in banking business sector; how to create banking sustainability business; how to promote the flow of information to streamline banking sustainability, and how to build capacity between policymakers and banks. This is the basis of research problems in this study. This study tried to answer the question of how to measure the initiative of Green Financing in Indonesian banking especially sharia banking. Green Banking system is transparent, honest, without usury, and cares on the social and environmental

surrounding and benefits. By adopting the Green Financing concept from Mahfuzur and Suborna (2016), a new dimension and framework developed. The proposed indicators were designed to align the principles of Green Financing and Islamic Sustainability. The Analytical Hierarchy Process (AHP) method is applied in review the importance weights of each indicator. This method more effective compared to other methods. It can be used to analyze the importance of the performance criteria in a measurement project (Fu and Lin, 2009). Thus, how big the contribution of each indicator in reaching the maximum measurement of Green Financing initiatives can be identified. The performance measurement graph will be displayed to explain the analysis and recommendations given. This can be used as a reference for the government, especially OJK to evaluate the implementation of Green Financing Initiatives and produce new policies towards the healthy finance in Indonesia.

2. Material and Methods

2.1 Research Design

This research is divided into several activities, including:

- a. Problems Identification. This is conduct through several literature reviews and interviews. Various issues and application of Green Financing model in world banking are learning from journals, books, government rules and articles. To strengthen the conceptual thinking, interviews with several banking experts in several institutions and practitioners in Central and Regional Financial Services Authority (OJK), central and local Bank Indonesia (BI) and some managers of Bank Syariah are establishing.
- b. Instruments Development. This is including the development of Questionnaires1, Rubrics, and Questionnaires2. Questionnaire1 aimed to define the level of importance using AHP weighting. Questionnaires2 were used to measure the implementation of Green Financing Initiatives.
- c. Model Development and Indicator Validation. Model testing is done through the dissemination of Questionnaires 2 to measure Green Financing performance in sharia banking. Analysis and recommendations are given for each performance.

2.2 Instruments Development

By referring on Government Regulations on Environmental Impact Assessment (AMDAL) and Green Financing Policy, as well as several sources of framework development studies such as Chowdhury and Habib (2014), Rashid (2010), Schultz (2010), Fenn (2012), Millat (2012), Green Financing dimension Framework was obtained which is consist of the Environmental Analysis (EA), Capital Adequacy (CA), Risk Management (RM), Financial Structures (FS), Disclosure Factor (FD), Governance Factor (FG). For detailed information on sub-variables can be seen in Table 3.1.

3. Result and Discussion

3.1 Priority Analysis of Green Financing Framework

The result of priority weighted of each variable and sub-variable in Green Financing framework explained in Table 3.1. This is obtained from the survey of questionnaires 1 with 25 questions from 6 constructs. Based on AHP processing, it found that the most priority factor of Green Financing Initiatives measurement is Environmental analysis (EA) with the priority weight of each sub-variable were EA1, EA2, EA3 and EA4, respectively. For Disclosure Factor (FD) became the second priority with the description of the priority weight of the sub-variable consisting of FD1, FD2, and FD3, respectively. Capital Adequacy (CA) provided as a third priority weight with a description of the priority of its sub-variables consisting of CA1, CA2, and CA3, respectively. Such is the case according to the data can be seen in Table 3.1.

Table 3.1 Results of Data Processing Priority Weight with AHP

No	Variable	Priority Values (Eigen Vector)	Sub Variable	Priority Values (Eigen Vector)	No	Variable	Priority Values (Eigen Vector)	Sub Variable	Priority Values (Eigen Vector)
1	EA	0.247	EA1	0.336	4	FS	0.149	FS1	0.638
			EA2	0.291			FS2	0.362	
			EA3	0.212	5	FD	0.126	FD1	0.453
			EA4	0.161			FD2	0.342	
2	CA	0.206	CA1	0.455			FD3	0.205	
			CA2	0.341	6	FG	0.099	FG1	0.183250616
			CA3	0.204			FG2	0.170652476	
3	RM	0.173	RM1	0.305			FG3	0.150619416	
			RM2	0.238			FG4	0.130118551	
			RM3	0.193			FG5	0.111635976	
			RM4	0.151			FG6	0.09827988	
			RM 5	0.113			FG7	0.086436124	
								FG8	0.069006962

3.2 Measurement of Green Financing Performance on Sharia Banking

The result of Green Financing Initiatives performance analysis on sharia banking (Bank Muamalat and Bank Syariah Mandiri) were obtained based on data analysis of questionnaire 2. The graphics performance can be depicted in Figure 3.1

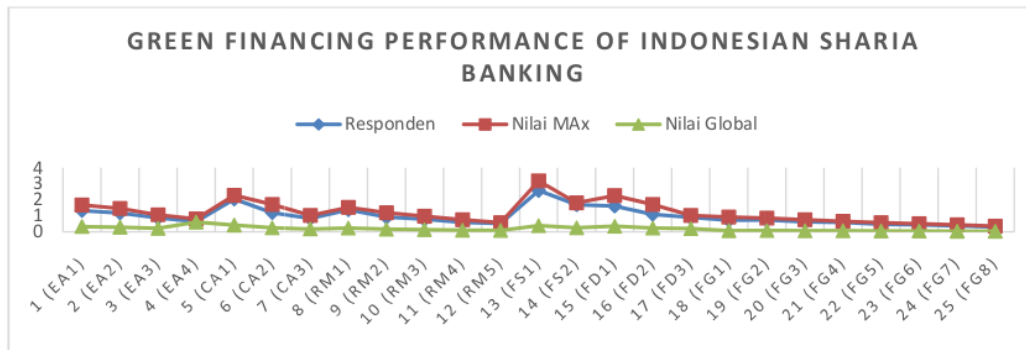


Figure 3.1. Graph of Green Financing Performance of Indonesian Sharia Banking

Figure 3.1 explained that the achievement of green financing implementation in sharia banking in Indonesia is not maximal enough, but the initialization is already visible and consider. This is described based on the achievement of a blue line as the respondent's achievement compared to the achievement of a red line as a target achievement. Several sub-variables have reached the maximum standard values such as EA4, RM5, FS2, FD3, FG3, FG4, FG5, FG6, FG7 and FG8. However, if it compared to the global eigenvalue vector of green banking performance of sharia banking in Indonesia still requires a huge increase and effort.

4. Conclusion

The Green Financing Measurement Framework in Sharia Banking has been developed in 6 constructs and 25 sub-variables or indicators. The priority weighting with AHP method has been successfully conducted in identifying the significance values of each sub-variable and variables. As a result, the implementation of Green Financing Initiatives in Indonesia Sharia banking has been considered, even not yet optimally socialized and implemented well. The analysis and recommendations in low, medium and high-performance categories provided OJK, BI or

Indonesia Sharia Banking to take actions and efforts towards the achievement of the healthy financial banking system. This model can be used as tools in assessing the performance of Indonesia banking more easily, and trigger the overcome of policies support thus optimize Green Financing Initiatives.

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References

- Handayana, Agus Dwi, 2015. www.Beritasatu.com/ekonomi/314843-pertumbuhan-bank-syariah-melambat-drastis.<http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=2203222&fileId=220322>.
- Mahfuzur, Rahman dan Suborna, Barua, 2016. "The Design and Adoption of Green Banking Framework for Environment Protection: Lessons From Bangladesh". Australian Journal of Sustainable Business and Society, Vol. 2.No. 1, March.
- Fu Hsin-Pin dan Lin Sheng-Wei. (2009). Applying AHP to Analyze Criteria of Performance Measurement for National Energy Promotion Project. International Journal of Electronic Business Management, Vol.7, No. 1.pp. 70-77.
- Chowdhury, TA, and Habib, SMA (eds) 2014, Green Banking in Bangladesh; Environmental Risk management in Banking. Bangladesh Institute of Bank Management (BIBM). Dhaka, Bangladesh, ISBN: 978-984-33-8352-5.
- Rashid, M 2010. 'Green Banking Comes to Focus'. The Daily Star 17 September. Accessed: August 7, 2012 at <http://archive.thedailystar.net/new-details.php?nid=154690>.
- Schultz, M 2010. 'What is the Meaning of Green Banking?'. Green Bank Report. vol. 2, pp. 127-131. Accessed on May, 2013 from: <http://greenbankreport.com/green-bank-deals/what-is-the-meaning-of-green-banking/>.
- Fenn, K 2012. 'All about Green Banking'. Private Climate Change. Accessed from: <http://www.preventclimatechange.co.uk/green-banking.html>.
- Millat, KM, Chowdhury, R, & Singha, EA 2012. Green Banking in Bangladesh Fastening Environmentally Sustainable Inclusive Growth Process. Bangladesh Bank, Dhaka, Bangladesh. Accessed from: <http://www.bangladesh-bank.org/pub/special/greenbankingbd.pdf>.

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